03040201-110

(Black Creek)

General Description

Watershed 03040201-110 extends through Darlington, Florence, and Chesterfield Counties and consists primarily of ***Black Creek*** and its tributaries from the Lake Robinson dam to the Pee Dee River. The watershed occupies 186,917 acres of the Sandhills and Upper Coastal Plain regions of South Carolina. The predominant soil types consist of an association of the Noboco-Bonneau-Alpin series. The erodibility of the soil (K) averages 0.14; the slope of the terrain averages 4%, with a range of 0-15%. Land use/land cover in the watershed includes: 42.8% agricultural land, 31.4% forested land, 13.1% scrub/shrub land, 8.5% urban land, 3.6% forested wetland (swamp), and 0.6% water.

This section of Black Creek accepts drainage from its upper reach together with Beaverdam Creek (King Millpond, Beaverdam Millpond) before flowing through Prestwood Lake (Dry Branch, Horsepen Branch) in the City of Hartsville. Downstream of the lake, Black Creek accepts drainage from Snake Branch, Spring Branch, Boggy Swamp (Little Boggy Swamp, McIntosh Millpond), Everlasting Branch (Gilbert Lake), Seed Branch (Little Seed Branch, Leavenworth Branch, Chapmans Pond), Horse Creek (Jeffords Millpond), and Lucas Creek. Swift Creek (Indian Creek, Ramsey Pond, Bellyache Creek) enters the system next, flowing through the City of Darlington, followed by High Hill Creek (Star Fork Branch, McCall Branch), Ashby Branch, and Polk Swamp Creek. The Black Creek Watershed drains into the Pee Dee River. There are 339.1 stream miles in this watershed and numerous lakes and ponds totaling 920.8 acres. Beaverdam Creek and Black Creek are classified FW* (dissolved oxygen not less than 4 mg/l and pH between 5.0 and 8.5) from the Lake Robinson Dam to the U.S. Hwy. 52 crossing (just upstream of Horse Creek and Lucas Creek). Tributaries to these stream reaches along with the remaining streams in the watershed are classified FW.

Water Quality

Station #	Type	Class	Description
PD-159	S	FW*	BLACK CREEK AT S-16-23 4.7 MILES NW OF HARTSVILLE
PD-268	S	FW*	SONOVISTA CLUB HARTSVILLE OFF DOCK OF PRESTWOOD LAKE
PD-081	S	FW*	PRESTWOOD LAKE AT US 15
PD-258	S	FW	SNAKE BRANCH AT RAILROAD AVENUE IN HARTSVILLE
PD-137	S	FW	SNAKE BRANCH AT WOODMILL STREET IN HARTSVILLE
PD-021	P	FW*	BLACK CREEK AT S-16-18 1 MILES NNE HARTSVILLE
PD-330	S	FW*	CREEK AT HIGHWAY 15 BYPASS
PD-023	P	FW*	BLACK CREEK AT S-16-13 5.5 MILES NE HARTSVILLE
PD-025	P	FW	BLACK CREEK AT S-16-133 2.25 MILES NE OF DARLINGTON
PD-141	S	FW	TILE DISCHARGING TO DITCH ACROSS RD AT DARLINGTON WWTP
PD-027	P	FW	BLACK CREEK AT S-16-35 5.5 MILES SE DARLINGTON
PD-103	S	FW	HIGH HILL CREEK AT US 52 ON COUNTY LINE
PD-078	W/BIO	FW	BLACK CREEK AT SC 327

Black Creek - There are seven monitoring sites along this section of Black Creek. Aquatic life uses are fully supported at the furthest upstream site ***(PD-159)***; however, there is a significant increasing trend in turbidity. There is a significant increasing trend in pH. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria concentration.

Below Prestwood Lake ***(PD-021)***, aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life acute standards, compounded by a significant increasing trend in turbidity. There is a significant increasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions. In addition, there was a significant increasing trend in fecal coliform bacteria concentration.

Aquatic life uses are fully supported further downstream at ***PD-330***. Significant decreasing trends in five-day biochemical oxygen demand and turbidity suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions, compounded by a significant increasing trend in fecal coliform bacteria concentration.

Aquatic life uses are fully supported at ***PD-023;*** however, there was a high concentration of zinc measured in 1994 and a very high concentration of chromium measured in 1995. There is a significant increasing trend in pH. A significant increasing trend in dissolved oxygen concentration and significant decreasing trends in five-day biochemical oxygen demand, total phosphorus concentration, total nitrogen concentration, and turbidity suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions.

At the next site downstream ***(PD-025)***, aquatic life uses are fully. There is a significant increasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand, total phosphorus concentration, total nitrogen concentration, and turbidity suggest improving conditions for these parameters. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria concentration.

Further downstream ***(PD-027)***, aquatic life uses are not supported due to occurrences of copper and zinc in excess of the aquatic life acute standards, including a high concentration of zinc measured in 1996 and a very high concentration of zinc measured in 1998. There is also a significant increasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand, total phosphorus concentration, total nitrogen concentration, and total suspended solids suggest improving conditions for these parameters. Recreational uses are fully supported and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

At the furthest downstream site ***(PD-078)***, aquatic life uses are fully supported based on macroinvertebrate community data. This is a blackwater system, characterized by naturally low pH. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are fully supported.

Prestwood Lake - There are two monitoring sites on Prestwood Lake. Aquatic life uses are fully supported at both the uplake site ***(PD-268)*** and the downlake site ***(PD-081)***; however, there is a significant increasing trend in turbidity at both sites. There is a significant increasing trend in pH at both sites.

Recreational uses are fully supported at both sites; however, there is a significant increasing trend in fecal coliform bacteria concentration. In an effort to provide access for recreation and industrial uses of the lake, 3000 grass carp (10/acre) were stocked in 1993. The lake was restocked in 1999 with another 3,000 carp.

Snake Branch - There are two monitoring sites along Snake Branch. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. At the upstream site ***(PD-258)***, aquatic life uses are fully supported. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. There is a significant decreasing trend in pH. A significant increasing trend in dissolved oxygen concentration and a significant decreasing trend in five-day biochemical oxygen demand suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions, compounded by a significant increasing trend in fecal coliform bacteria concentration.

Aquatic life uses are also fully supported at the downstream site ***(PD-137)***. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are fully supported.

Tilefield discharging to ditch at Old Darlington WWTP to Swift Creek (PD-141) - Aquatic life uses are not supported due to dissolved oxygen excursions, compounded by a significant decreasing trend in dissolved oxygen and significant increasing trends in five-day biochemical oxygen demand, total nitrogen concentration, and turbidity. Recreational uses are not supported due to fecal coliform bacteria excursions, compounded by a significant increasing trend in fecal coliform bacteria concentration.

High Hill Creek (PD-103) - Aquatic life uses are fully supported; however, there is a significant increasing trend in turbidity. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are partially supported due to fecal coliform bacteria excursions, compounded by a significant increasing trend in fecal coliform bacteria concentration.

A fish consumption advisory has been issued by the Department for mercury and includes portions of Black Creek within this watershed (see advisory p.115).

NPDES Program

Active NPDES Facilities

RECEIVING STREAM	***NPDES#***

FACILITY NAME *PERMITTED FLOW @ PIPE (MGD)* *COMMENT*	*TYPE* *LIMITATION*
BLACK CREEK SONOCO PRODUCTS/HARTSVILLE PIPE #: 002 FLOW: 0.177 PIPE #: 001 FLOW: 4.03	SC0003042 MAJOR INDUSTRIAL EFFLUENT WQL FOR DO,NH3N,BOD5
BLACK CREEK CITY OF HARTSVILLE PIPE #: 001 FLOW: 2.50 PIPE #: 001 FLOW: 3.50 (PROPOSED) PIPE #: 001 FLOW: 4.50 (PROPOSED) PIPE #: 001 FLOW: 5.50 (PROPOSED) WQL FOR DO,TRC,NH3H	SC0021580 MAJOR DOMESTIC WATER QUALITY WATER QUALITY WATER QUALITY WATER QUALITY
BLACK CREEK CITY OF DARLINGTON/BLACK CREEK WWTP PIPE #: 001 FLOW: 1.60 WQL FOR DO,TRC,NH3N	SC0039624 MAJOR DOMESTIC WATER QUALITY
BLACK CREEK IMC RAINBOW PIPE #: 001 FLOW: M/R	SCG250022 MINOR INDUSTRIAL EFFLUENT
BLACK CREEK DARLINGTON COUNTY S&WA PIPE #: 001 FLOW:0.25	PROPOSED MINOR DOMESTIC EFFLUENT
BLACK CREEK WELLMAN INC./PALMETTO PLT PIPE #: 001 FLOW: 0.90 PIPE #: 001 FLOW: 1.016 (PROPOSED) WQL FOR NH3N	SC0004162 MAJOR INDUSTRIAL WATER QUALITY WATER QUALITY
BLACK CREEK CAROLINA POWER PIPE #: 011 FLOW: 0.426	SC0002925 MAJOR INDUSTRIAL EFFLUENT
SWIFT CREEK CITY OF DARLINGTON/NORTH MAIN ST WTP PIPE #: 001 FLOW: M/R	SCG641014 MINOR DOMESTIC EFFLUENT
SWIFT CREEK DCW&SA/SWIFT CREEK WWTP PIPE #: 001 FLOW: 0.114 WQL FOR DO,TRC,NH3N	SC0043231 MINOR DOMESTIC WATER QUALITY
INDIAN CREEK TRIBUTARY CITY OF DARLINGTON/52 BYPASS WTP PIPE #: 001 FLOW: M/R	SCG645016 MINOR DOMESTIC EFFLUENT
HIGH HILL CREEK DCW&SA/MATOWN WWTP PIPE #: 001 FLOW: 0.03 WQL FOR DO,TRC,NH3N,BOD5	SC0029033 MINOR DOMESTIC WATER QUALITY

STAR FORK BRANCH TRIBUTARY MARLOWE MOBILE HOME PARK PIPE #: 001 FLOW: 0.012 WQL FOR DO,TRC,NH3N,BOD5	SC0027669 MINOR DOMESTIC WATER QUALITY
MCCALL BRANCH CITY OF FLORENCE/LUCAS ST. WTP PIPE #: 001 FLOW: M/R	SCG645024 MINOR DOMESTIC EFFLUENT

Nonpoint Source Management Program

Camp Facilities

FACILITY NAME/TYPE ***RECEIVING STREAM***	***PERMIT #*** ***STATUS***
KOA CAMPGROUND/FAMILY BLACK CREEK	21-0028 ACTIVE

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
CITY OF FLORENCE MUNICIPAL	DWP-054 CLOSED
DARLINGTON COUNTY LANDFILL MUNICIPAL	161001-6001 (161001-1101, CLOSED DWP-060)
DARLINGTON COUNTY C/C LANDFILL CONSTRUCTION	161001-1201 (CWP-031) ----------
SONOCO PRODUCTS CO. INDUSTRIAL	163315-1601 (IWP-119) ----------
DARLINGTON VENEER CO. INDUSTRIAL	163307-1601 (IWP-112) ----------
DARLINGTON VENEER CO. CONSTRUCTION	CWP-010 ----------
UNION CARBIDE-LINDE DIV. INDUSTRIAL	IWP-132 ----------
COKER PEDIGREE SEED COMPANY INDUSTRIAL	IWP-072 ----------
PEE DEE ENVIRO SERV. C/C LANDFILL CONSTRUCTION	212426-1601 (CWP-015) ----------
PEE DEE ENVIRO SERV. C/C LANDFILL CONSTRUCTION	212426-1201 ----------
NUCOR STEEL INDUSTRIAL	163324-1601 (163324-1602, IWP-245, ---------- IWP-208)

Land Application Sites

LAND APPLICATION SYSTEM FACILITY NAME	*ND# TYPE*
TILEFIELD ODOM'S MHP	ND0067997 DOMESTIC
PERCOLATION BASIN JAMES F. BYRNES ACADEMY	ND0067245 DOMESTIC
TILEFIELD SWINKS MHP	ND0067636 DOMESTIC
SPRAYFIELD DCW&SA/SWIFT CREEK PLANT	ND0067962 DOMESTIC
SPRAY ON GOLF COURSE FLORENCE COUNTY/DIST. #4	ND0073695 DOMESTIC

Mining Activities

MINING COMPANY MINE NAME	*PERMIT # MINERAL*
PALMETTO SAND & FILL PALMETTO SAND #2	0912-31 SAND/CLAY
L.H. STOKES & SON, INC. HOFFMEYER PIT	1067-31 SAND/CLAY
L.H. STOKES & SON, INC. DOVESVILLE	0924-31 SAND
PEE DEE ENVIRONMENTAL SERV. LEGGS PIT	0900-41 SAND/CLAY
APAC-CAROLINA, INC. ASPHALT PLANT #8	0084-41 SAND
INDUSTRIAL PAVING, INC. BRUNSEN MINE	0349-31 SAND/CLAY
MCCUTCHEON & SCURRY PIT #1	0192-31 SAND/CLAY

Water Supply

WATER USER (TYPE) STREAM	*REGULATED CAPACITY (MGD) PUMPING CAPACITY (MGD)*

SONOCO PRODUCTS/HARTSVILLE #1 & #3 (I)	8.496
PRESTWOOD LAKE	-----
SONOCO PRODUCTS/HARTSVILLE #2 & #4 (I)	8.496
PRESTWOOD LAKE	-----

Growth Potential

There is a high potential for growth in this watershed, which contains the Cities of Hartsville and Darlington, the Town of Dovesville, and portions of the City of Florence and the Towns of McBee and Clyde. The watershed has several major highways that serve as growth corridors. U.S. Hwy. 52 connects Florence to Darlington and has been widened to four lanes, with long term plans to continue the widening from Darlington to Cheraw. S.C. Hwy. 151, already widened to four lanes, is the main Florence to Charlotte travel corridor, and is becoming a magnet for commercial development. The segment of S.C. Hwy. 151 between Darlington and Hartsville is the primary growth corridor for Darlington County and should see additional commercial and industrial growth.

There is extensive water service coverage in the watershed coming from the Town of McBee, the Cities of Hartsville, Darlington, and Florence, and the Darlington County Water and Sewer Authority. Sewer service is currently limited to the three urban areas. Water and sewer system expansions in the watershed are highly likely. All three domestic systems have aggressive growth plans, especially the City of Florence which has recently constructed a new treatment facility and outfall to the Pee Dee River. The City of Florence also has tentative plans to develop a regional surface water treatment facility along the Pee Dee River to address severe groundwater supply problems being experienced by many Pee Dee municipalities.